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CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society
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An Opuntia growing in a back yard in Phoenix.
(From *Peoples Magazine of Arizona*.)



CACTUS AND SUCCULENT JOURNAL

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EDITORIAL

You may now send your sections of the *Illustrated Glossary* for binding (see back of questionnaire in the center section of this issue). We can supply the missing sections at 20 cents each. Send your 112 pages to the Editor, 136 W. Union St., Pasadena, with \$1.50 and they will be bound in cloth and returned to you post-paid. This offer expires April 30.

The year 1940 has started with the third printing of Mr. William Hertrich's book "*A Guide to the Desert Plant Collection in the Huntington Botanical Gardens*." This popular book has doubled its sales each year, which indicates a greatly increased interest in cacti.

The second cactus book to be reprinted in 1940 is "Cacti for the Amateur" of which there were 6000 sold last year. A beginners' book of this kind seems to have helped those who were seeking a readable book and hundreds of letters expressing appreciation have been received.

The next JOURNAL will contain the first installment of the monograph, "*Colorado Cacti*" by Dr. Charles H. Boissevain and Carol Davidson. This fine contribution to science will interest every student of cacti, and not least among its salient features are photographs beyond description.

We feel honored in having received the last work of our late President Emeritus. Mrs. Arthur D. Houghton has given the JOURNAL all of Dr. Houghton's copy and notes on his proposed succulent book. It is our hope that the publication of his keys will lead others to carry on where he left off, and that his love for succulent plants

will be recorded as a lasting memory. We plan to alternate the JOURNAL supplements so that both cactus and succulent enthusiasts may be fairly served.

A Society member in England has offered to furnish the JOURNAL with translations, descriptions and photographs of all of the *Mammillarias*. This should be another valuable series as a JOURNAL supplement.

Mr. Baxter reports progress on the *Ten Year Cumulative Index* of the JOURNAL and we hope that this valuable reference book will be finished by early summer.

Another outstanding cactus book is well under way. "*Naming Cacti*" by Wm. Taylor Marshall will be fully illustrated with drawings of every key by Thorwald M. Bock. This has been planned for years and will answer the needs of all students who wish to name their cacti and to know the differences in the various genera. This will be an all-American book with the classification of cacti brought up to date. This work may serve as the long desired "fifth volume of Britton and Rose."

And last but not least, the *Euphorbia* monograph is progressing with its hundreds of illustrations. Messrs. White and Sloane plan that these volumes will be comparable with "*The Stapeliae*." Regarding this latter three volume edition we are glad to announce that the set is still available at a price far below actual cost—the difference being the authors' generous contribution to those interested in this group of succulents.

SCOTT E. HASELTON

SIXTH ANNUAL CACTUS SHOW

The sixth annual free exhibit of the South West Cactus Growers will be held at Manchester Playground, 8800 South Hoover Street, Los Angeles, June 15th and 16th. Those interested in entering an exhibit will please contact Mr. Chas. A. Place of 645 W. 40th Place, Los Angeles, Calif., who is acting as show manager for this year.

EDWARD S. TAYLOR, *Chairman Publicity Committee.*



Haworthia Reinwardtii Haw. nat. size.

Notes on Haworthias

By J. R. BROWN

Haworthia Reinwardtii Haw. Revis. (1821) 53; Bak. in Fl. Capens. VI (1896) 337; Berger in Pflanzenr. IV. 38. (1908) 83; Poelln. in Repert. Sp. Nov. XLI (1937) 209. —*Aloe Reinwardtii*, Salm-Dyck, Monogr. (1836-49) sect. 6 fig. 16.

Plant with densely leaved stems, 10-15 cm. tall, 4-5 cm. in diam., erect, but procumbent with age, proliferous from the base and forming dense clusters. Leaves crowded, deep green, erect, incurved, 3-5 cm. long, 11-15 mm. wide towards the base, ovate-lanceolate, acuminate, face of leaves slightly rounded, smooth or often

with a slightly raised, lengthwise middle line on which may occur a few tubercles, back of leaves very rounded and with numerous small, white tubercles, which are arranged in 9-15 lengthwise rows and also in transverse rows, obscurely keeled towards the tip.

Peduncle slender, 30-40 cm. tall; pedicels 4-6 mm. long, the bracts very short; perianth about 15 mm. long, rosy-white in color, with green lines, the recurved segments white with rose colored keels.

Locality: type locality unknown. Recorded from Albany, from Carnarvon and from the vicinity of Grahamstown.

Introduced to cultivation in Europe in 1818. Named in honor of C. G. C. Reinwardt.

Haworthia Reinwardtii belongs to the sect. *Coarctatae* Berger and this *Haworthia* and its several forms are among the most attractive of the genus. The plant used to illustrate this sp. has many withered leaf tips. This, however, is not characteristic of the plant in cultivation, but in this case, is the result of frost injury.

The back of the leaves are ridged lengthwise and on these slight ridges the tubercles are borne. These longitudinal ridges are fairly well defined on the most withered leaf of the plant illustrated. Distinct transverse rows are also formed by the slightly raised tubercles. The number of tubercles in the lowermost transverse rows varies considerably, often 15 or more, but averaging about 13.

Where these plants can have sufficient sunlight or can be grown out of doors, the green color of the back of the leaves turns brown and this plant and its closely related forms assume fine shadings of color as the cooler weather of winter approaches.

The photos show a plant of *Haworthia Rein-*

wardtii nat. size and the insert shows the back of an average leaf nat. size.

Note: Prof. Casper Georg Carl Reinwardt visited the Cape in 1816 when voyaging from Holland to the Dutch East Indies, where he founded the famous botanical garden of Buitenzorg, Java.

FROM WICHITA, KANSAS

I enjoy the JOURNAL very much and especially articles written on areas through which we travel and know in this part of the country. Core Drilling and Seism. work takes us ahead of development so we work some very wild areas.

HARRY HOLDEN.

FROM CANADA

I have roses in the summer but in the winter they seem to leave me when buried away under the snow, but my cacti are with me all the time, and I don't mind the coal I burn. I have a little trouble keeping the temperature below 60 degrees that is when the sun shines on my greenhouse. Last night it was 5 below zero and at noon today it was up over 32 degrees. Anyway I am keeping the temperature between 40 and 60 degrees. I have a *Zygocactus* at this time with 9 flowers.

JAS. H. COLES, Loreto, Ontario, Can.

Notes on *Apicras*

By J. R. BROWN

Apicra foliolosa (Haw.) Willd. in Berl. Mag. V (1811) 274; Bak. in Fl. Capens. VI (1896) 331; Berger in Pflanzenr. IV. 38. (1908) 120. — *Aloe foliolosa* Haw. in Trans. Linn. Soc. VII (1804) 7; Salm-Dyck, Monogr. (1836-49) sect. 2 fig. 4.

Plant with slender, erect, leafy stems 10-30 cm. tall, 2-3 cm. in diam., slowly proliferous from the base. Leaves crowded, in 5 spiral rows, spreading, orbicular-deltoid and ending in a very sharp point, 12-15 mm. long and wide, deep green in color, smooth and shining, face of leaves slightly concave, becoming flat with age, back of leaves somewhat obliquely keeled in the upper part, the slightly thickened margins and the keel cartilaginous, and crenulately roughened.

Peduncle 30 cm. and more tall, simple, slender; pedicels 2-5 mm. long, the bracts about the same length; perianth about 12 mm. long, greenish-white, with short, spreading, obtuse, whitish segments.

Locality: Type locality unknown. Recorded from the karroo between Zwartkopsriver and Sondagsriver, So. Africa.

Introduced to Kew Gardens by Francis Masson in 1795.

The name *foliolosa* refers to the densely leaved stems.

The plant shown in the illustration of this *Apicra* is a well grown greenhouse specimen, when grown out of doors the leaves are a little more densely crowded, are slightly more spreading and the growth is very much slower. Plants of this *Apicra* grown in the open and of the same age have only one stem 3-4 inches tall. It is possible to estimate the age of a plant growing in its natural surroundings and of the size shown by this glasshouse grown specimen as being about 15 years.

The pattern and outline of the leaves is also shown in the insert, this photo, looking directly down on the top portion of a stem, was taken of a stem grown out of doors.



Apicra foliolosa (Haw.) Willd. nat. size.

New York Opuntias

By RICHARD L. JACOBS

During my three years as a cactus collector, I read many articles pertaining to New York's only representative of the Cactus family, the Eastern *Opuntia compressa* (*Opuntia vulgaris*). Several times during the three years I took trips in search of this *Opuntia*, but my quests always ended in failure. On the basis of certain information, I scaled the steep sides of High Tor Mountain, near Haverstraw on the Hudson River, and at other times I searched the Palisades on the opposite bank of the Hudson, but never a sign did I see of this elusive plant.

Then one day in August, 1939, I was told by the superintendent of our apartment house of a "flat-leaved cactus plant" he had seen on Long Island. I was naturally excited at the prospect of a cactus growing wild just sixty miles from the heart of New York City. I questioned his discovery, but to back up his statement he presented me with a small specimen. Its four-inch, wrinkled, spineless pads clearly identified it as my long sought *Opuntia compressa*.

I was told that the cacti grew in profusion at Mt. Sinai near Port Jefferson, Long Island, and I was given the name of a man who would take me to the very place where they grew. So, after two weeks of tiresome waiting, the family and I left on a cloudy Sunday for Long Island. Two hours later we arrived at the guide's rural home at Mt. Sinai. Here, we hastily collected boxes and shovels and drove down to the nearby beach with our guide. When we reached the parking area at the shorefront, we gathered our equipment and proceeded to hike along the sandy beach.

I saw that we were on a narrow peninsula about two miles long, very sparsely inhabited and covered with low sand dunes. We walked about a mile along the shore and then headed inland, where bayberry bushes and scrubby red cedars covered the dunes. I was instantly struck with the resemblance of this section to Nantucket Island, off the coast of Massachusetts. We plowed our way through the sand and thick underbrush and suddenly I saw my first *Opuntia compressa*, a smallish clump, nestling flat and green on the sand. With a thrust of my shovel, I uprooted it; a fine specimen of about ten joints. Nearby were other clusters. As we walked toward the end of the peninsula, the plants became

larger and more numerous, and in some places the ground was so covered with cacti that we could scarcely avoid stepping on them. I should judge that there were several thousand plants on this small strip of land.

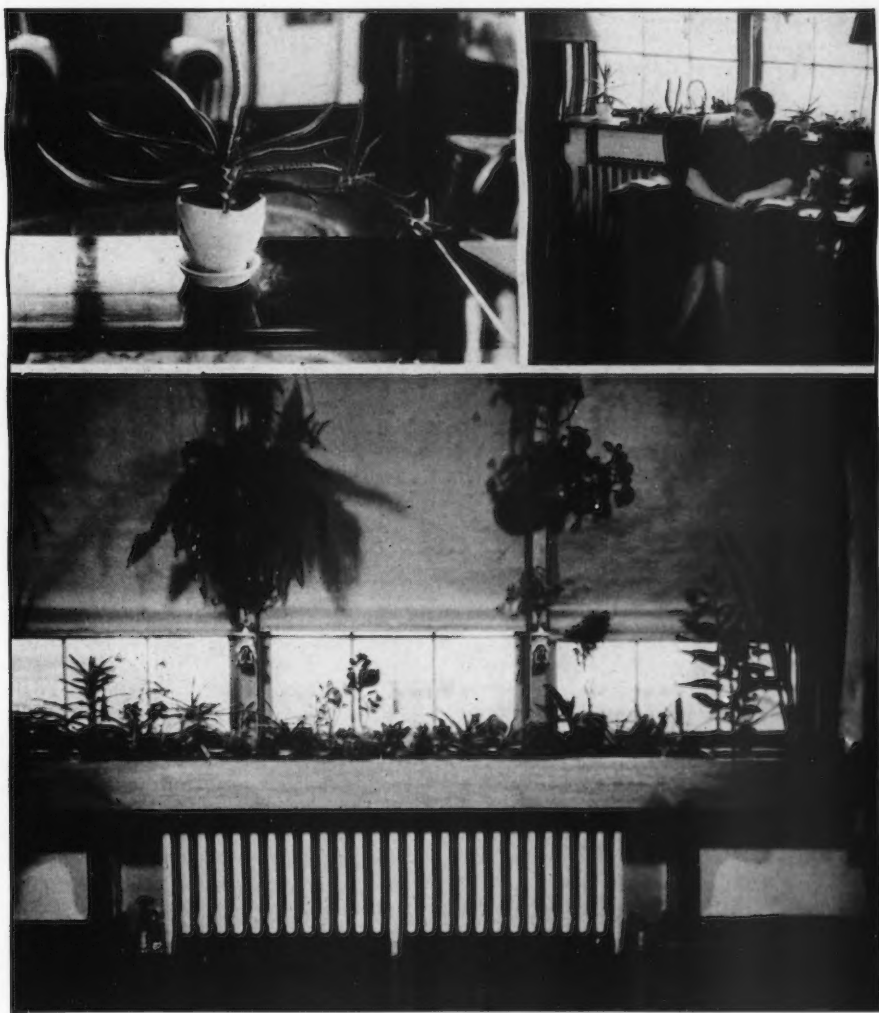
The pads ranged from tiny sun-baked joints one inch across, to large pads covered by underbrush, measuring eight inches long and three across. The size of the clumps varied greatly; some of them were four feet across and sixteen inches high, with pads numbering in the three hundreds, to clumps of one, two and three pads. I counted from two, to as many as eight pads attached end to end.

The pads are spineless but bear many fine glochids, 1/16 to 1/4 of an inch long, and these can cause much suffering to their victim. The pads get more wrinkled as they grow older, and it is on the oldest pads that the largest and greatest number of glochids are found. The plant is procumbent and the joints flop over after the first winter, so the largest plants are tall, solely because of the sheer bulk of hundreds of pads. The plants were fruiting when I saw them, and the ovaries were an inch, to one inch and a half long and of a purplish pink color.

I observed in every clump I uprooted, that unlike most cacti, the central root went straight down, sometimes for six feet. The reason was soon apparent. The root went down until it hit the water level of Long Island Sound. So that here, even if there is no rain all summer, the plants are always supplied with ample water.

Experimenting over a period of time, I find that *Opuntia compressa* is extremely rot-resistant. I have even rooted an uncalloused cutting in a quart of water. Most hardy cacti are very rot-resisting. During the latter part of September we sometimes have a few weeks of steady rain, but my 20 varieties of winter hardy cacti suffer no ill effects.

Opuntia compressa takes readily to cultivation, growing rapidly and flowering freely with good care. It should have full sun and lots of water during the spring and summer months. In my garden at New Canaan, Connecticut, it is shriveled and sapless during the cold months, but in late June it perks up and buds and then blooms beautifully under the July sun.



Midwinter in My Succulent Sun-Room

By CLARA HOWARD CLEVINGER, Missouri

When everything is covered with snow and ice, and the thermometer dips below zero at night, I revel in my gay, light sun-room, where my aloes and haworthias and gasterias thrive and defy the weather man howling outside. But our defiance is mixed with caution, for the temperature sinks rapidly with the sun, and I hasten to turn on the spare radiator and lower the shades

to prevent the cold glass-panes from chilling my plants. No casualties so far!

The large picture shows where I keep about half of my collection, in front of three wide east windows. The distance across these three windows is more than ten feet, nine inches, and there is a long low radiator beneath. Borrowing an idea from the sand-filled wooden tables in

commercial green-houses, I had a carpenter build a long wooden box-trough seven inches deep and a foot wide all the way across the triple window. If you look closely, you will see on each side of the radiator a heavy, strong wooden bracket which supports the flat-bottomed tray.

There is also a fifteen-inch long wooden block that exactly fits on top of the radiator just under the center of the trough to prevent sagging. This trough is sturdily built of what is called one-inch lumber, and carefully fastened to the wall under the window sill as well as to the supporting brackets. The top is exactly even with the window sills. It is stained to match the other wood-work in the sun-room.

Then I had to cudgel the so-called brain for a scheme to display in this trough plants of varied sizes, from the big sansevierias in seven-inch pots at each end, down through the plants in six-inch, five-inch and four-inch pots to the smallest ones in two and a half and three-inch pots. I wanted all of them to stand in the big trough so that the entire plant would be up above the level of the window sill, to provide adequate light and to restrain any tendency to grow "leggy".

First, I experimented a little. From a piece of stainless steel left over from my cabinet tops in the kitchen, I had a shallow tray made, just about two inches deep, and the proper width to fit inside the big wooden trough, but just two feet long. This metal tray was held up by a frame in the bottom of the wooden box, so that the top rims of the two are even. In this shallow metal tray my small plants stand up bravely. Then I had two deep trays made of galvanized iron, one for each end of the big wooden trough. These are about six inches deep, one of them two feet long, the other a foot and a half in length. They stand right in the ends of the big trough and are deep enough for plants in the largest pots I use. My sansevierias accent the grouping, by providing height at each end.

Another shallow metal tray, three feet long and two inches deep, and one of an intermediate depth of four inches but about twenty inches long, fill the remainder of the trough with enough space between them for me to insert a hand when I need to lift them out. The shallower ones are held up by frames, made of two by four boards tacked across them, so all five metal pans have their rims flush with the trough rim.

This permits considerable versatility in arrangement, for the deeper and shallower trays can be interchanged, and the plants suitable for each may be in different places in the window at different times. Sand or pebbles in the bottom

of the trays provide drainage, moisture or protection from cold for the pots. Any one of the five trays can be lifted out of the trough for cleaning or changing the sand.

Brackets between the windows at the top, and at each end, furnish support for hanging baskets of fern, St. Bernard's lily, philodendron and peperomia, and I have a figure of a Mexican sitting in front of a tubular cactus on each upright between the windows. I call him "Cactus Pete", and let him watch over my plants as much as such a superbly languid, relaxed person can be expected to watch.

One of the smaller pictures shows a favorite, my *Gasteria verrucosa*, with two offsets growing on a long stem at the right. They look so much like blooms I hesitate to cut them off and pot them. This *Gasteria* really is a beauty and I have some lovely little *Haworthias*, too.

The other picture is of me in front of the north windows in the sunroom. There is a broad shelf in front of this window, where many plants do exceptionally well. A lusty little ever-blooming African violet is on the table beside my chair.

The South window is reserved for the plants that require sun. A tardy *Zygocactus truncatus* is apparently preparing to bloom here, if these cold nights do not blight the buds before they open. It is hard to keep an even temperature throughout the night, and this plant is sensitive to cold at blooming time. I have been thinking that next year I'll get about half a dozen *Epiphyllums*, for I don't have quite enough blooms. But I find my hobby continues to be absorbing, and each new plant a great thrill, so I am ready for the second degree to be conferred upon me. What is it,—"ultra-amateur?"

FROM SANTA ANA, CALIF.

I have read that the plant *Echeveria desmetiana* is very reluctant to send off shoots, but mine is blossoming the second time this year and has 14 new plants. They start at the bottom and run up over the top to bottom on other side. It is a pretty sight.

MRS. ROBERT ALLEN.

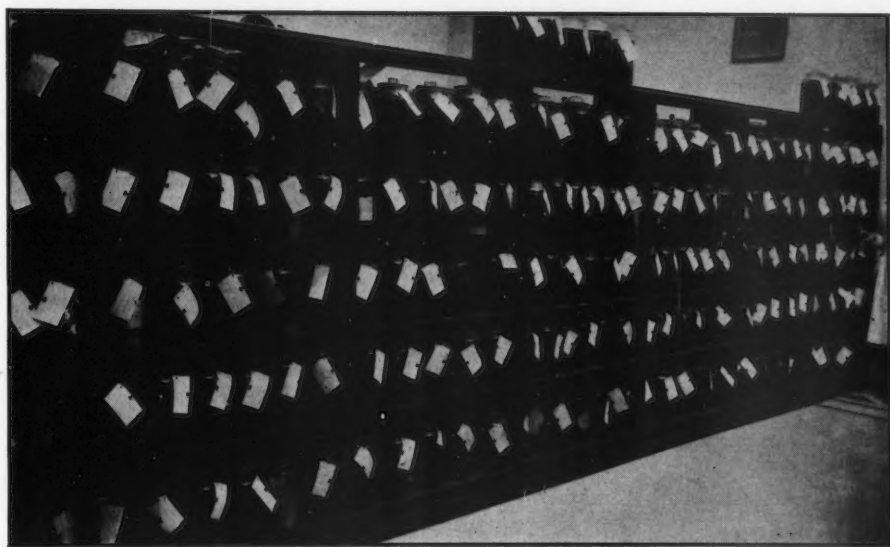
FROM TEXAS

I just received my January JOURNAL. I enjoyed reading "Vacation in Mexico" by Mr. Geo. Lindsay and the addition of illustrations made it extremely interesting. I wish we could have some more of these travel articles in the JOURNAL. It gives tourists an idea where they want to go, so you see these articles are "blazing the trail" as it were, for future travel.

MRS. ESTELLE SMELTZER, San Antonio, Texas.

"Cacti for the Amateur is most delightful in many ways. It is highly informative; it is beautiful, even to the casual observer; it is intriguing to those who are becoming interested in the fascinating subject of cacti.

MRS. LOUISE S. SWAIN, Ind.



The cactus collection in the Herbarium of the Museum of Natural Sciences of Buenos Aires, Argentina.

The Cactus Family in the Museum of Natural Sciences of Buenos Aires

By A. CASTELLANOS and H. V. LELONG

Art. 18

Recommendations:

VII. The utmost importance should be given to the preservation of the original ("type") material on which the description of a new group is based. *International Rules of Botanical Nomenclature* (1935)

Mr. Fedde, well known editor of review *Repertorium specierum novarum regni vegetabilis*, has published an interesting article in it, entitled "Ueber Mihilismus und andere Ungenauigkeiten," Bd. XLII (1937) 89-100. On page 93 we found this important datum. "Es ist auch schon der sehr empfehlenswerte Vorschlag gemacht worden, dass jeder, der eine Neuheit gefunden haben will, das Original und die Neubeschreibung einem dafür geeigneten botanischen Ins., das im Besitze eines Herbars und von Fachleuten ist, mindestens nach der Veröffentlichung der Neuheit Zusenden sollte. Es ergäbe sich auch dieser Bestimmung sicherlich eine grosse Ersparnis an Papier und auch an Zeit für den unglücklichen Monographen oder Floristen, der sich mit den Neuschaffungen beschäftigen muss und mit ihnen doch nichts anfangen kann, weil er das Original ja gar nicht nachzuprüfen in der Lage ist."

And the foot note says: Wie mir mitgeteilt wird, soll in Deutschland die Abgabe von Typen für alle Sukkulanten an eine im Entstehen begriffene Zentralstelle durchgeführt werden. Erforderlich ist eine solche Massnahme, weil alle Bearbeitungsmöglichkeiten durch meist fehlende Typen stark behindert werden. Herbarbelege müssen also unbedingt verlangt werden und an einer zugänglichen Stelle (anerkannten Instituten) niedergelgt werden. Gerade für Sukkulanten ist eine derartige Regelung dringend notwendig, auch schon im Interesse des kaufenden Publikums, wie sie ja auch schon vom Reichsnährstand, Abt. Gartenbau, geplant ist."

One of us (A.C.) in 1926, in connection with the First South American Congress of Chemistry,¹ proposed that specimens of species of plants to be the object of chemical study should be deposited in the herbariums of the institutes belonging to the countries adhering to said Congress. From the paragraphs cited by Mr. Fedde's article we see that in Germany it is proposed to

(¹) Actas y trabajos del Segundo Congreso de Química (Primer Sudamericano). Buenos Aires II (1926) 285-286.

act similarly with species of succulent plants, which seems to us very acceptable.

In the present article we wish to inform readers of the CACTUS JOURNAL, how the collection of cacti in the herbarium of the Museum of Natural Sciences of Buenos Aires was initiated and preserved, taking into account the preservation of types, which are of great importance in the systematic study of these variable plants *in vivo* and which are enormously deformed on being dried for the herbarium.

In *Chronica Botanica* II (1936) 67-68, we published an historical resume of the Botanical Section of the institution of the title. In it we referred briefly to all the existing botanical collections, but in the present, it will only be to the cacti, in view of the fact that this family of Phanerogams is generally neglected, even in the most famous herbariums.

The Botanical Section of the Museum of Natural Sciences of Buenos Aires was founded in 1913 under the direction of the botanist Lucien Hauman. Before this date, some collections existed which were under the honorary care of the botanist Charles Spegazzini, well known for his various publications upon Cactaceae. But the types of the majority of his species or classifications are not preserved in it, because Spegazzini generally made his notes on the spot or from the plants cultivated in his house from flowerpots without labels. His memory was not always so reliable as to recollect the name itself and place of origin of each specimen. A little before his death occurred in 1926, he donated his collection of live cacti to the Zoological Garden of La Plata, the director of which, Dr. Charles Marcelli, has been kind enough to give us some of the types (holotypes or cotypes⁽²⁾) whose species and place of origin we have been able to identify in accordance with publications and verbal recollections. Amongst others, we possess *Chamaecereus Silvestrii* (Speg.) Brit. et Rose (*Cereus Silvestrii* Speg.), *Opuntia cordobensis* Speg. etc. From these examples and the chorotypes, we have been able to establish with certitude this last species of Spegazzini and realize that all the specimens sent by Dr. C. C. Hosseus under the name of *Opuntia cordobensis* Speg. to the Botanical Garden of Berlin in Dahlem and other places in Europe, it is not a case of the Spegazzini species but of another quite different.

Spegazzini did not preserve at all the specimens of the Cactaceae used in his studies, which in several cases created synonyms of his own species or amplified geographical distributions with analogous species all attributed to one alone

through mistaken determination on the ground. This same lack of preservation of material causes various species of Spegazzini to figure in the revisions of the subject in "incertae sedis" or as "species dubia," either because their descriptions are not sufficiently explicit, many being without illustrations, or because the examples are not found either in the herbariums nor in nature, etc.

Dr. Christopher M. Hicken facilitated several new species to J. N. Rose when the latter was in Argentina. In his great work, which he afterwards published in collaboration with N. L. Britton, they dedicated to him various species; e. g. *Opuntia Hickenii* Brit. et Rose, *Pterocactus Hickenii* Brit. et Rose and even a genus *Hickenia* Brit. et Rose which for reasons of priority cannot be preserved. Nevertheless the duplicates of the types do not exist for the most part in Argentina, either because Hicken gave away all the material or because afterwards no care was taken to preserve it. The fact is that during Hicken's life we had opportunity to revise his collections and nothing of all that material could be found.

Upon founding the Botanical Section and when Eng. Hauman took charge of it no collections of cacti were made. In view of this and of what had occurred with Spegazzini and Hicken, as soon as one of us took charge of the direction of the Section, he arranged to treat the Cactaceae in the same way as the other families of Phanerogams or better still, on account of the great difficulty which the identification of species presents when no types exist, which is little less than a guess, reducing to its taxonomy one of the fundamental properties of Science: the exactitude.

I (A.C.) began in 1924 to collect the dispersed material which existed in the Section. In this way appeared isotypes of *Rhipsalis linearis* Schum. collected by Niederlein in Misiones and published by us in the *Annales* of this Museum XXXII (1925) 491, tab. 3. Afterwards we travelled through the country (Argentina) in all the cactus regions, making collections and preserving them in formol at 20% in jars as illustrated, which prevents the deformation occasioned by desiccation. Many sterile examples are brought to Buenos Aires and cultivated in the garden of the Museum and the flowers are drawn in colors and photographed and kept in the collections in the form indicated. There also exists a small lot of dry cacti in the herbarium, prepared in accordance with the method indicated by Sanzin, R. (3) Several of the specimens which

(3) Sanzin, R., *Apuntes sobre Cactáceas de Mendoza*.—Primera Reunión Nacional de la Sociedad Argentina de Ciencias Naturales. Buenos Aires (1919) 275-278.

(2) For the signification of these terms see the end.

this author employed in this publication are in the herbarium of the Botanical Section of this Museum.

Friends as we were of the botanists who worked in Argentine (Kurtz, Spegazzini, Sanzin, Lillo and Hicken), we had the opportunity to ask them where the places were where they had collected their specimens and there we went to find them in order to at least have the chorotypes of their species and of their classifications. It has been possible to get together a fairly complete collection and we have just initiated the revision of the family with all the difficulties due to lack of adequate library and well classified material for comparison. Of the species referred to by Arechavaleta, no examples are preserved in the herbarium of the Museum of Montevideo, which could facilitate the task at any rate in the common species in the neighboring countries.

The cacti in the old books of Pfeiffer, Salm Dyck, etc., are described very briefly and in the modern, their descriptions are based on cultivated examples in conditions very different from their habitat, so that the result is incongruous compared with the examples collected directly from nature. On revising the Argentine species, cultivated in the European botanical gardens, we could hardly recognize even the most common. One can never express exactly in words the aspect and shape that an example possesses, hence the extreme necessity of its preservation for its specific considerations if one does not wish to increase the number of species, with ordinary specimens, we do not say *lusus naturae* but *lusus hortii*, a category that botanists miss, but which interests merchants.

The preservation of material studied for a publication, either of a new species or any other classification is now more necessary than ever, because the phantastic pulverization of the systematic categories is an infirmity of the epoch, in a family so variable as the Cactaceae.

The descriptive contribution of business amateurs, instead of collaborating in the progress of a science, it constituted a serious obstacle to its development.

The categories of the types we possess in the collection of Cactaceae giving their definitions and some examples are the following.

HOLOTYPE—If in the original publication, a single specimen is cited, this is the holotype; for example, *Lobivia Schreiteri* Castell., *Opuntia puelchana* Castell., *O. geometrica* Castell., *O. Weberi* Speg. var. *dispar* Castell. et Lelong, *O. Molfinoi* (Speg.) Werder. (= *Maibueniopsis Molfinoi* Speg.).

ISOTYPES—When a collection is divided into two or more series with the same numera-

tion, and with a number of them a species, variety or new form is founded, all the examples of the same number of the type, although the author may not have seen them, are the isotypes; for example, *Rhipsalis linearis* Schumann.

COTYPES—If various numbers of herbarium are cited each one of the rest, after the holotype being identified, is the cotype; for example, *Opuntia cordobensis* Speg., *Chamaecereus Silvestrii* (Speg.) Brit. et Rose (= *Cereus Silvestrii* Speg.).

CHOROTYPES, choros=spot (or topotypes, locotypes).—Specimen collected in the same locality where the holotype was found and with which it agrees; for example, *Echinocactus mammosus* Lem. var. *pampeanus* (Speg.) Castell. et Lelong. nov. comb. (= *Echinocactus pampeanus* Speg.), *Gymnocalycium gibbosum* (Haw.) DC. var. *platense* (Speg.) Castell. et Lelong nov. comb. (= *Echinocactus platensis* Speg.), etc.

PHOTOTYPES—Photograph of types; for example, *Maibuenia patagonica* (Phil.) Brit. et Rose (= *Opuntia patagonica* Phil.).

SURELY NOT CACTI

"NAME CHANGING.—Mr. G. C. Nearing, of Ridge-wood, N. J., sends us a printed slip which he mails to his correspondents to show how he feels at being obliged to revise his vocabulary annually. This slip reads as follows:

Scientific names of plants are being rewritten and changed by the tens of thousands. This changing cannot be stopped. It is the privilege of any person, with or without botanical standing, to change the name of any plant at his whim, subject only to a few simple rules. Result—a needless, meaningless confusion, and apparently nothing can be done about it. Nothing? I can do something, and I will. I too can change those names. It is my inalienable right, and yours. I can change the names back again where they belong, back to what you and I know and can recognize. Under all rules these names will be right, supremely right. They can cause no confusion, and they will be understood. I will use the old names and only the old names, and I will not bother with books that print new ones. Will you?

Another correspondent writes: 'The taxonomist is no longer a botanist in the best sense of the word. He has little interest in plants except as the information obtained will help him in his game of making names and attaching his own to the new combinations. If he were not interested in this, he would have found, during the past five centuries, some way to indicate species, varieties and forms without dragging in his own and other names as a part of each technical name. Undoubtedly this has led to the inordinate splitting of genera in many cases such as the orchids, blueberries, and maples.'

IF IT ISN'T RATS, IT'S BOILERS

I lost a lot of my cacti. We burn oil in our heater and the boiler sprang a leak. J. C. B., N. Y.

Mrs. Erma Plummer York of Lucerne, Calif., reports a *Trichocereus Schickendantzii* grown in her yard on the shore of Clear Lake, Lake Co., with 64 flowers on the plant at one time last spring.

LABELING

JOURNAL OF THE NEW YORK BOTANICAL GARDEN

"Someone has said that a museum is a collection of labels illustrated by exhibits. These words might also be applied to the great collection of living plants at The New York Botanical Garden, which is a museum of living exhibits.

"Plants brought together for esthetic value alone obviously need no labels; but to lend educational value to displays, labels are necessary, not only to answer the fundamental question of the name of each plant, but also to convey additional information about it, especially its geographic origin, uses, or cultivation.

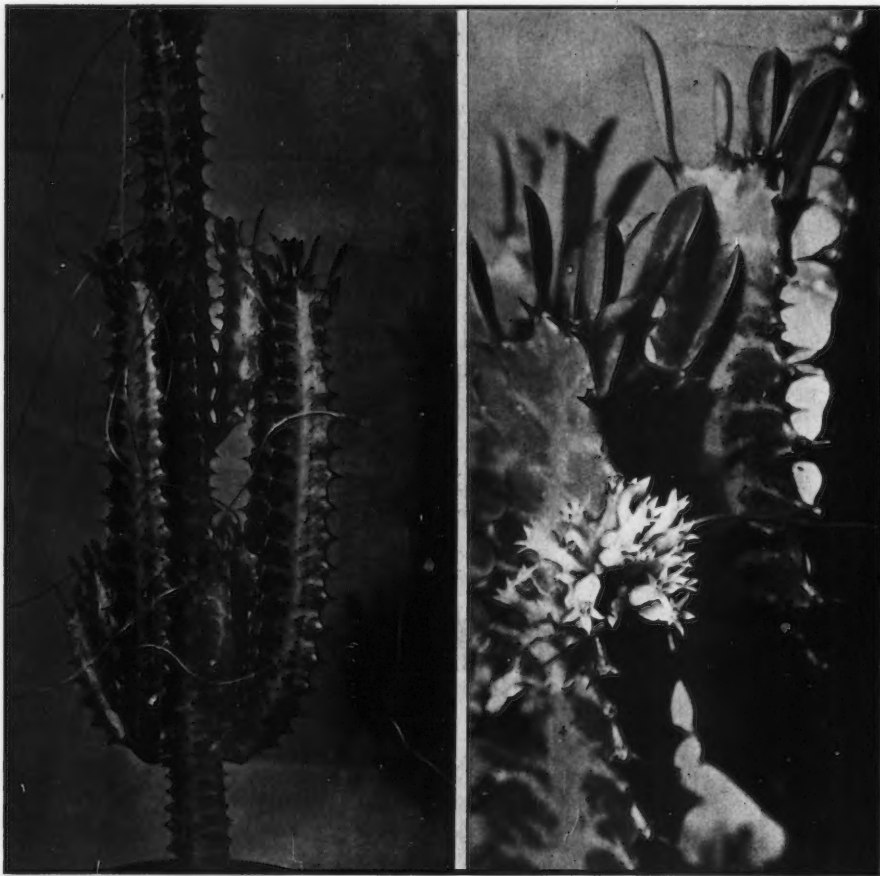
"To make the labels unobtrusive, yet legible and informative, the Botanical Garden uses several different types. One, made of ground glass suspended by slender wire, carries a general account of a group of plants or entire house, such as the cactus collection. Other large labels, such as those in the economic houses and outdoors on the dahlias and roses, are painted on wood. Metal labels of zinc or lead are often attached to tree-trunks.

"For the thousands of plants being grown in our propagating houses, much smaller labels of wood or zinc are used to show the name of the plant and, for Garden records, the accession number and source.

"It is no small task to prepare the several thousand labels that must be made every year. Each one requires accurate, often involved work, in ascertaining the true identification of the specimen, for always the name used must be the one accepted in botanical literature.

"When there is doubt about the proper name of a plant, the flowers are examined, compared with others in the herbarium, and checked in the library with published descriptions. It may be necessary to correspond with distant botanists and borrow herbarium specimens from other institutions before the plant can be positively identified.

"Any museum exhibit has value only as names are applied to the objects shown and information about them is given. A label seems an insignificant part of a plant display, yet its character, the information which it bears, and even the making of it involve more judgment, technical information, and labor than the people realize."



Euphorbia hermetiana acting as host to the parasitic plant *Cuscuta* or dodder. Its interesting white flowers appear to be fastened to the host with a single strand of thread.

Photo by Boyd L. Sloane.



A few of the smaller plants showing a variety in form and color. Left to right: *Pelargonium paradoxum*, *Euphorbia valida*, *Lithops pseudotruncatella*, *Conophytum Pearsonii*, *Argyrodema Schlechteri*, *Pleiospilos Nelii*, *Cotyledon undulata*, *Adromischus cristatus*, *Echeveria pulvinata*, *Hoodia Juttae*.

GLAZED POT CULTURE

Secretary Denny of Huntington Beach, Calif., has been most successful in growing cacti and the other succulents in glazed pots. His soil mixture consists of:

- 2 gallons compost soil.
- 2 gallons oak leafmold (sifted through $\frac{3}{8}$ inch screen).
- $1\frac{1}{2}$ gallons sharp plasterer's sand.
- $1\frac{1}{2}$ gallons decomposed granite.
- $\frac{1}{2}$ gallons barnyard manure (well decomposed) sifted through $\frac{1}{4}$ inch screen.
- $\frac{1}{3}$ gallons coarse poultry charcoal.

Mix thoroughly and dehydrate in the hot sun in shallow boxes—this seems to help keep the soil "alive." In climates where the sun is not sufficiently hot, the soil may be sterilized with carbon bi-sulphide, using 2 ounces to a 40 pound lard pail of soil covered over night. Let the soil "air out" to eliminate traces of the gas before using. As carbon bi-sulphide is highly inflammable, care should be used to keep flame and lighted matches at a safe distance. A new gas, methyl bromide, which is non-explosive, can be

used for this purpose, although it is not easy to obtain.

In potting, the above soil mixture can be varied according to the plant requirements, more or less leafmold, sand, or fertilizer. First, place a layer of gravel, then a layer of charcoal; on this place a half inch layer of spagnum moss. Fill the pot to within $\frac{3}{4}$ inch of the top with the soil mixture.

To avoid frequent repotting, Mr. Denny uses a commercial fertilizer balanced and mixed for him by a plant food company. The important ingredients are 8% nitrogen, 18% phosphorus and 18% potash. This plant food is water soluble and should be dissolved in warm water, using 1 teaspoon to a quart of water. Saturate the soil thoroughly at two week intervals during the growing season.

Mr. Denny's cultural methods produce an abundance of flowers, and some of his specimen succulents have no equal in this country. Although some of his plants are grown in the glass house, most of the plants are on benches or in lath houses the year around.

QUESTIONS AND ANSWERS

Does the withholding of water in winter have any effect on the flowering of the plants?

Answer: In some types, unless they can dry off in the resting period, very few flowers are produced and it might be given as almost a general rule that more flowers follow a complete rest period and a complete rest is induced by withholding water. Cold weather often induces a period of rest at which time water should be withheld.

In using tin cans is there any other method besides dipping them in tar to prevent rust? Would some

kinds of paint, such as that used on window screens serve the purpose just as well, and be a little more decorative? Such a method could be used from time to time, so that one wouldn't have to wait and save up a number of cans to do the dipping. I'd like to have an answer to this question as soon as I could, as I have a few seedlings that should be repotted in larger containers. What I am wondering about the paint is, would it hurt the plants, and also be lasting?

Answer: Bithulastic solution is even better than tar, but screen enamels or other paint products are not permanent and may prove injurious to the more tender plants.



GROWING CACTI IN MAINE

I should have had many more blooms last summer if I did not have such an urge to get results quickly. The weather during the late April and May was on the whole dull and cold. So, believing my plants were standing still from some other reason, I repotted.

Results,—fine new growth when growing weather finally came, but no blooms. I'll learn sometime, I hope. Nevertheless, the sturdy growth all my plants have made up for the lack of flowers.

I am sending a picture of the muslin house I kept my plants in up to the middle of October. The frame at the side with muslin sides I used for some of the desert types. The house was

seven feet to the peak, and the two benches, six feet long and thirty inches wide, contained coarse coal ashes on which the plants stood. During the hottest weather the two gable ends were removed for ventilation.

Acquisition of new plants during the season made necessary two shelves above each bench and one along the back end, so by the first of September there was "standing-room only" in my house.

I have kept notes this year and can probably get together some sort of a report to send you later on the flowering periods of cacti.

OLIVER P. YOUNG.

PRESIDENT'S MESSAGE

So little interest has been shown in the proposed convention that we must abandon the idea for this year at least. Although several of our affiliate societies throughout the country suggested that they would be delighted to act as hosts, only one group offered to send delegates to the city selected for a convention. As an alternative measure, we are considering having a lecturer and an assistant visit as many of our affiliated groups as possible and discuss with them mutual problems. In addition to these discussions, an illustrated lecture could be presented before the local garden club.

As the Society has no funds for lecture purposes, such an undertaking would have to be financed by the lecturer himself. Naturally we would not wish anyone to incur this expense unless our members think that such a tour would result in increased interest and new memberships. Another problem confronting us is to find the person or group of persons who could make the lecture tour at their own expense. It is regrettable that the Society has no endowment for publicity purposes.

In an early issue we will start publication of an excellent monograph on the hardy cacti of Colorado, with about forty illustrations in black and white. When the manuscript came to us, it had thirty-five color photographs which we were compelled to omit because the cost of printing would have been over \$3500. Even ten of these color plates would have been a valuable addition, but the cost of their reproduction would have amounted to \$1000. Like the convention, this color work, too, has to be abandoned until such time as a greater subscription list or an endowment by some good friend is made possible.

In this issue a questionnaire is inserted. I urge every reader to fill out this sheet and mail it promptly to the editor, P. O. Box 101, Pasadena Calif. Your answers are important, as our future policy depends on them.

Replies to my request for medicinal uses of Cacti were most gratifying and excerpts from many of the replies will be published in the JOURNAL.

This success emboldens me to make another request. Who has tried Vitamin B₁ on Cacti or other succulents and with what success? Have you tried any of the rooting preparations on Cacti or other succulents and what happened?

Replies to these questions will also be printed in full or in part in later issues.

WM. TAYLOR MARSHALL

327 N. Ave. 61, Los Angeles, Calif.

AFFILIATE NEWS

Mr. Max Jaehnert, Vice-President of the Milwaukee Cactus & Succulent Society, treated readers of the *Milwaukee Evening Post* to an interesting account of his cactus hobby. The two column article, topped with a large cut of Mr. Jaehnert himself in his heated glass-house, gives information on how to acquire plants and, more important, how to grow them after they are obtained. Innumerable pointers are given on the subject and it is our earnest hope that Max will write a similar article for our JOURNAL readers.

A beautiful day, good attendance, a very interesting talk and a successful auction, made the February meeting of The Southern California Exchange a very enjoyable affair. Mr. Roy Miller, President of the South West Cactus Growers and member of the Exchange, was the speaker and his subject was "Behind the Scenes of a Cactus Show." To the average person unfamiliar with shows this talk was quite a revelation. Working out the details for a successful show requires almost a year's time to bring everything to the point

of placing the plants in the show. At this time there is a lot of hustle and hard work to get the plants properly arranged and ready for the judging. As soon as the judging is finished the show belongs to the public. At the end of the second day the program is reversed and it is more work and hustle to get the plants removed and the building in order again. As one listens to such a talk, he is impressed with the thought that here is a group of people that have a love for cactus and the beauties of nature and are willing to do all this work just for the pleasure derived from it. I have a great admiration for people who do things. May your next show be better than ever. After the lecture we induced Mr. Place to do the honors of auctioneer. He sold everything in sight and asked for more. The average price was very good and all were satisfied. I want to visit Mr. Place's garden and see some of those plants he was talking about at the auction. They must be something very new for I do not find them in any of my books and Britton and Rose do not list them.

Reports from the East say that the cold weather is still with them and holding back the growth of their plants, except of course, in heated glass-houses. Here in Southern California, we are, or at least some of us are, applying fertilizer and water to our ground in ever increasing amounts. We have experienced an exceptionally warm winter; in fact, the majority of our plants have not stopped growing.

Did you notice from the list published last month that there were seven new clubs or societies that have affiliated with the National Society during the past year? Other local groups may obtain full information in regard to such affiliation and learn the advantages to be derived therefrom by writing Ervin Strong, 315 W. Erna, La Habra, Calif.

Will members in northern New Jersey please communicate with Mr. A. W. Garrabrant, 39 Garrabrant Ave., Bloomfield, N. J.

NEW PRICE LIST

Mr. A. R. Davis of Marathon, Texas, has just issued an undated retail and wholesale list of collected plants. Mr. Davis has been a member of the Cactus Society for many years and has introduced many people to the hobby of growing cacti. Many of his collected plants are easily flowered and strangers see, for the first time, the wonderful cactus flowers. The price list is free. Address Mr. Davis at Box 167, Marathon, Texas, and please mention the JOURNAL.

JOHNSON CACTUS GARDENS

The new 1940 catalog is packed with illustrations—160 including 60 in color. The 28 pages contain the most popular succulents which appeal to beginners and collectors. Mr. Johnson has given the plants common names which will be a relief for many beginners. The scientific names, too, are used and all plants are guaranteed true to name, thus maintaining the guarantee of this 64 year old institution. Another important feature of The Johnson Cactus Gardens is that they do not substitute; this is of inestimable importance and is one of the secrets why Harry Johnson is one of the leading railers.

Send for a copy of this valuable catalogue—price 10c. Johnson Cactus Gardens, Hynes, California. Please mention the JOURNAL.

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A. R. DAVIS

P. O. Box 167, Marathon, Texas

THE CACTUS AND ITS HOME—By Forrest Shreve.

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